

REMARKS

Favorable reconsideration of this application as currently amended and in light of the following discussion is respectfully requested.

Claims 17-26 are currently pending. No claims have been amended herewith. The present Amendment adds new Claims 22-26. The additions to the claims are supported by the originally filed application. No new matter has been added.

In the outstanding Office Action, Claims 5 and 13 were rejected under 35 U.S.C. § 112, first paragraph;¹ and Claims 17-21 were rejected under 35 U.S.C. § 102 as being anticipated by Jensen et al. (U.S. Patent No. 6,175,614, hereinafter "Jensen").

In response to the rejection of Claims 5 and 13 under 35 U.S.C. § 112, first paragraph, Applicant respectfully submits that the rejection refers to claims that were cancelled in the amendment filed on November 8, 2004. Accordingly, Applicant respectfully submits that the rejection is moot.

Without limiting the claims, Applicant respectfully submits that an X-ray diagnosis apparatus can include *both an imaging mode and a fluoroscopy mode*. By performing *imaging*, the X-ray diagnosis apparatus acquires data on still images used for diagnostic purposes. By performing *fluoroscopy*, the X-ray diagnosis apparatus acquires data on motion pictures used for determining the position where imaging should be performed. It therefore follows that fluoroscopy is performed prior to imaging in many cases. Further, the X-ray intensity used in imaging is greater than the X-ray intensity used in fluoroscopy. In addition, the initial ROI used in fluoroscopy is greater than that used in imaging because fluoroscopy is performed for determining the position where imaging should be performed. Without limiting the claimed invention, Applicant directs the Examiner to a further description in the specification, e.g., page 19, line 11 to page 20, line 13.

¹ Applicants note, however, that Claims 5 and 13 are not currently pending.

Applicant further submits that, to perform imaging when an apparatus is in the fluoroscopy mode, the fluoroscopy mode first has to be ended, and then the imaging mode has to be set. Even if parameter settings are changed when the apparatus is in the fluoroscopy mode, it is not possible to acquire images that can be obtained in the imaging mode since imaging and fluoroscopy, as discussed above and in the specification, are performed for different purposes, and the applicable conditions, such as those mentioned above (e.g., X-ray intensities, ROI, etc.), differ between the imaging mode and the fluoroscopy mode.

Applicant believes the above discussion makes clearer the general differences between imaging and fluoroscopy. Further, in order to vary the scope of protection recited in the claims, new Claims 22-26 have been added. New Claims 22-26 find non-limiting support in the disclosure as originally filed, for example, in original Claims 1-16 and at pages 19 and 20 of the specification. In particular, 'radiography' is clearly supported by features of original Claim 1, including "radiates an X-ray" and "an image generating unit that generates an image of a predetermined size based on the X-ray passing through an interior of a body of the subject." Therefore, the changes to the claims are not believed to raise a question of new matter.² Applicant notes that the outstanding Office Action is final, but respectfully requests that new Claims 22-26 be entered since they would not require further consideration and/or search by the Examiner. Claims 22-26 are analogous to Claims 17-21, except that the term "imaging mode" is replaced by the term "radiography mode" in the new claims.

Applicants respectfully traverse the rejection of Claims 17-21 under 35 U.S.C. § 102 as anticipated by the Jensen patent.

Claim 17 is directed to a diagnostic X-ray system, including: (1) an X-ray generating unit that performs *a first X-ray radiation in a fluoroscopy mode* to determine an imaging position, and *a second X-ray radiation in an imaging mode* to acquire a diagnosis image,

² See M.P.E.P. 2163.06 stating that "information contained in any one of the specification, claims or drawings of the application as filed may be added to any other part of the application without introducing new matter."

according to predetermined respective X-ray loading factors; (2) an X-ray beam limiting unit that limits a radiation region of the X-ray through beam limiting; an image generating unit that generates an image based on the X-ray passing through a subject; (3) ***a region set unit that sets a first region in the image in the case of moving to the fluoroscopy mode, and sets a second region broader than the first region in the image in the case of moving to the imaging mode;*** (4) a region transform unit that transforms the first region to exclude the radiation region corresponding to the beam limiting when the first region includes the region corresponding to the beam limiting, and transforms the second region to exclude the region corresponding to the beam limiting when the second region includes the region corresponding to the beam limiting; (5) a brightness computing unit that computes a brightness value within the transformed first region or within the transformed second region when the first region or the second region is transformed by the region transform unit, and computes a brightness value within the first region or within the second region set by the region set unit when the first region or the second region is not transformed by the region transform unit; and (6) a controller that determines the X-ray loading factor related to the first X-ray radiation or the second X-ray radiation on the basis of the brightness value, and performs feedback control of the X-ray generating unit on the basis of the X-ray loading factor.

The Jensen patent, directed to a method for providing automatic brightness control in a closed loop x-ray imaging system, does not teach or suggest any fluoroscopic mode, but only a plain conventional imaging mode. Therefore, Applicant respectfully submits that Jensen fails to teach or suggest the fluoroscopy mode limitations recited in independent Claim 17. That is, Jensen fails to teach or suggest at least “an X-ray generating unit that performs ***a first X-ray radiation in a fluoroscopy mode*** to determine an imaging position, and ***a second X-ray radiation in an imaging mode*** to acquire a diagnosis image, according to predetermined respective X-ray loading factors” and “***a region set unit that sets a first region***

in the image in the case of moving to the fluoroscopy mode, and sets a second region broader than the first region in the image in the case of moving to the imaging mode,” as recited in Claim 17.

Therefore, the prior art fails to disclose every feature recited in Claim 17, so that Claims 17 (and dependent Claims 18-21) patentably define over the Jensen patent. Accordingly, Applicant respectfully traverses and requests reconsideration of the rejection based on Jensen.³

Finally, contrary to the assertion in the Office Action at page 3 that “the distinction between ‘fluoroscopy’ limitations and ‘imaging’ limitations has not been explained and does not appear in the disclosure as alleged,” Applicant submits that numerous differences clearly appear in the specification. For example, the specification states on pages 19 and 20 that “the diagnostic X-ray system can pick-up an image both in *an imaging mode of acquiring detailed still images or moving images* of a subject to be diagnosed, and in *a fluoroscopic mode of acquiring a series of X-ray images successively or periodically so as to display visible images in real-time*,” “[w]hen compared with each other, *image pick-up in the imaging mode and image pick-up in the fluoroscopic mode are different in size of ROIs of initial setting, in strength of radiated X-rays*, etc,” “the ROI of initial setting in the imaging mode (...) is *generally larger in size* than the ROI of initial setting in the fluoroscopic mode,” and “strength of radiated X-rays in the imaging mode of acquiring diagnosis images *is higher than* that in the fluoroscopic mode.”

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in

³ See M.P.E.P. 2131: “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference,” (Citations omitted) (emphasis added). See also M.P.E.P. 2143.03: “All words in a claim must be considered in judging the patentability of that claim against the prior art.”

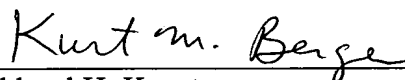
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condition for formal allowance. A Notice of Allowance for Claims 17-26 is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicant's undersigned representative at the below listed telephone number.

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